SEQUENCE LISTING

<110> Allen, Keith D. Matthews, William Moore, Mark

<120> TRANSGENIC MICE CONTAINING GLUCAGON RECEPTOR GENE DISRUPTIONS

<130> R-648

<140> To Be Assigned

<141> Herewith

<150> US 60/251,804

<151> 2000-12-06

<150> US 60/266,044

<151> 2001-02-01

<160> 6

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 1944

<212> DNA

<213> Mus musculus

cagggtctcc cttgcaacct gaggagaggt gcacacactc tgaggaccta ggtgtgcaac 60 ctctgccaga tgtggggcgt ggctacccag aggcatgccc ctcacccagc tccactgtcc 120 ccacctgctg ctgctgctgt tggtgctgtc atgtctgcca gaggcaccct ctgcccaggt 180 aatggacttt ttgtttgaga agtggaagct ctatagtgac caatgtcacc acaacctaag 240 cctgctgccc ccacctactg agctggtctg taacagaacc ttcgacaact actcctgctg 300 gcctgacacc cctcccaaca ccactgccaa catttcctgc ccctggtacc taccttggtg 360 ccacaaagtg cagcaccgcc tagtgttcaa gaggtgtggg cccgatgggc agtgggttcg 420 agggccacgg gggcagccgt ggcgcaacgc ctcccaatgt cagttggatg atgaagagat 480 cgaggtccag aagggggtgg ccaagatgta tagcagccag caggtgatgt acaccgtggg 540 ctacagtctg tccctggggg ccttgctcct tgcgctggtc atcctgctgg gcctcaggaa 600 gctgcactgc acccgaaact acatccatgg gaacctgttt gcgtcctttg tgctcaaggc 660 tggctctgtg ttggtcatcg attggctgct gaagacacgg tacagccaga agattggcga 720 tgacctcagt gtgagcgtct ggctcagtga cggggcgatg gccggctgca gagtggccac 780 agtgatcatg cagtacggca tcatacccaa ctattgctgg ttgctggtag agggcgtgta 840 cctgtacagc ctgctgagcc ttgccacctt ctctgagagg agcttctttt ccctctacct 900 gggcattggc tggggtgcgc ccctgctgtt tgtcatcccc tgggtggtgg tcaagtgtct 960 gtttgagaat gttcagtgct ggaccagcaa tgacaacatg ggattctggt ggatcctgcg 1020 tattcctgtc ttcctggcct tactgatcaa ttttttcatc tttgtccaca tcattcaact 1080 tettgtggce aagetgegtg cecateagat geactatget gattacaagt teeggetgge 1140 caggiccacg etgacectca tecetetget gggggtecac gaggiggtet tigeettigt 1200gactgacgag catgcccaag gcaccctgcg ctccaccaag ctcttttttg acctgttcct 1260 cageteette cagggtetge tggtggetgt tetetactgt tteeteaaca aggaggtgea 1320 ggcagagctg atgcggcgtt ggaggcaatg gcaagaaggc aaagctcttc aggaggaaag 1380 gttggccagc agccatggca gccacatggc cccagcaggg ccttgtcatg gtgatccctg 1440 tgagaaactt cagcttatga gtgcaggcag cagcagtggg actggctgtg tgccctctat 1500 ggagaceteg etggecagta gteteceaag gttggetgae ageeceaeet gaateteeae 1560 ttggagccta ggcaggttgt gttcaagaaa gggcctcaga ggacaaccca gagccagatg 1620 cccggccaag gttgaagagc caaagcagca agacagcagc ttgtactgtg cacactcccc 1680 taacctgtcc tagcctggca caggccacag tgacagagta ggggttggat atgatggaga 1740 agccatgtta tctatgaact ctgagtgttc ccatgtgtgt tgacatggtc cctgtaccca 1800 gatatgtcct tcagtaaaaa gctcgagtgg agctgctgca cagctcgtgg acagcaggct 1860 tgaagccccc agggacgggg tttgggaggc cggggatgag cagcacactc agcaggtgga 1920 gcgctagtgc aacccaggaa agaa 1944

<210> 2

<211> 485

<212> PRT

<213> Mus musculus

<400> 2 Met Pro Leu Thr Gln Leu His Cys Pro His Leu Leu Leu Leu Leu Leu Val Leu Ser Cys Leu Pro Glu Ala Pro Ser Ala Gln Val Met Asp Phe Leu Phe Glu Lys Trp Lys Leu Tyr Ser Asp Gln Cys His His Asn Leu Ser Leu Leu Pro Pro Pro Thr Glu Leu Val Cys Asn Arg Thr Phe Asp Asn Tyr Ser Cys Trp Pro Asp Thr Pro Pro Asn Thr Thr Ala Asn Ile Ser Cys Pro Trp Tyr Leu Pro Trp Cys His Lys Val Gln His Arg Leu Val Phe Lys Arg Cys Gly Pro Asp Gly Gln Trp Val Arg Gly Pro Arg Gly Gln Pro Trp Arg Asn Ala Ser Gln Cys Gln Leu Asp Asp Glu Glu Ile Glu Val Gln Lys Gly Val Ala Lys Met Tyr Ser Ser Gln Gln Val Met Tyr Thr Val Gly Tyr Ser Leu Ser Leu Gly Ala Leu Leu Leu Ala Leu Val Ile Leu Leu Gly Leu Arg Lys Leu His Cys Thr Arg Asn Tyr Ile His Gly Asn Leu Phe Ala Ser Phe Val Leu Lys Ala Gly Ser Val Leu Val Ile Asp Trp Leu Leu Lys Thr Arg Tyr Ser Gln Lys Ile Gly Asp Asp Leu Ser Val Ser Val Trp Leu Ser Asp Gly Ala Met Ala Gly Cys Arg Val Ala Thr Val Ile Met Gln Tyr Gly Ile Ile Pro Asn Tyr Cys Trp Leu Leu Val Glu Gly Val Tyr Leu Tyr Ser Leu Leu Ser Leu Ala Thr Phe Ser Glu Arg Ser Phe Phe Ser Leu Tyr Leu Gly Ile Gly Trp Gly Ala Pro Leu Leu Phe Val Ile Pro Trp Val Val Val Lys Cys Leu Phe Glu Asn Val Gln Cys Trp Thr Ser Asn Asp Asn Met Gly Phe Trp Trp Ile Leu Arg Ile Pro Val Phe Leu Ala Leu Leu Ile Asn Phe Phe Ile Phe Val His Ile Ile Gln Leu Leu Val Ala Lys Leu Arg Ala His Gln Met His Tyr Ala Asp Tyr Lys Phe Arg Leu Ala Arg Ser Thr Leu Thr Leu Ile Pro Leu Leu Gly Val His Glu Val Val Phe Ala Phe Val Thr Asp Glu His Ala Gln Gly Thr Leu Arg Ser Thr Lys Leu Phe Phe Asp Leu Phe Leu Ser Ser Phe Gln Gly Leu Leu Val Ala Val Leu

```
Tyr Cys Phe Leu Asn Lys Glu Val Gln Ala Glu Leu Met Arg Arg Trp
                                    410
                405
Arg Gln Trp Gln Glu Gly Lys Ala Leu Gln Glu Glu Arg Leu Ala Ser
                                                     430
            420
                                425
Ser His Gly Ser His Met Ala Pro Ala Gly Pro Cys His Gly Asp Pro
        435
                            440
                                                445
Cys Glu Lys Leu Gln Leu Met Ser Ala Gly Ser Ser Ser Gly Thr Gly
                        455
                                            460
Cys Val Pro Ser Met Glu Thr Ser Leu Ala Ser Ser Leu Pro Arg Leu
                                                             480
465
                    470
                                        475
Ala Asp Ser Pro Thr
                485
<210> 3
<211> 200
<212> DNA
<213> Artificial Sequence
<220>
<223> Targeting Vector
<400> 3
gcagccgtgg cgcaacgcct cccaatgtca gttggatgat gaagagatcg aggtccaggt 60
cagctctgga gggtatgggg tggtgtcaca gcggggctgt gtggggccag gggatacggc 120
actgcccagc cccactcggc ctctggtttg cagaaggggg tggccaagat gtatagcagc 180
cagcaggtga cgtacaccgt
<210> 4
<211> 200
<212> DNA
<213> Artificial Sequence
<220>
<223> Targeting Vector
gaggtggtct ttgcctttgt gactgacgag catgcccaag gcaccctgcg ctccaccaag 60
ctcttttttg acctgttcct cagctccttc caggtgagtc tccatcatac cccaccctg 120
ggacccagag tgctgtcctt gaccactctc tttctccagg gtctgctggt ggctgttctc 180
tactgtttcc tcaacaagga
<210> 5
<211> 2034
<212> DNA
<213> Homo sapiens
<400> 5
ggatctggca gcgccgcgaa gacgagcggt caccggcgcc cgacccgagc gcgcccagag 60
gacggcgggg agccaagccg acccccgagc agcgccgcgc gggccctgag gctcaaaggg 120
gcagcttcag gggaggacac cccactggcc aggacgcccc aggctctgct gctctgccac 180
tcagctgccc tcggaggagc gtacacacac accaggactg cattgcccca gtgtgcagcc 240
cctgccagat gtgggaggca gctagctgcc cagaggcatg ccccctgcc agccacagcg 300
accectgetg etgttgetge tgetgetgge etgecageca caggteecet eegeteaggt 360
gatggacttc ctgtttgaga agtggaagct ctacggtgac cagtgtcacc acaacctgag 420
cctgctgccc cctcccacgg agctggtgtg caacagaacc ttcgacaagt attcctgctg 480
gccggacacc cccgccaata ccacggccaa catctcctgc ccctggtacc tgccttggca 540
ccacaaagtg caacaccgct tcgtgttcaa gagatgcggg cccgacggtc agtgggtgcg 600
tggaccccgg gggcagcctt ggcgtgatgc ctcccagtgc cagatggatg gcgaggagat 660
tgaggtccag aaggaggtgg ccaagatgta cagcagcttc caggtgatgt acacagtggg 720
ctacagcctg tccctggggg ccctgctcct cgccttggcc atcctggggg gcctcagcaa 780
```

```
gctgcactgc acccgcaatg ccatccacgc gaatctgttt gcgtccttcg tgctgaaagc 840
cagctccgtg ctggtcattg atgggctgct caggacccgc tacagccaga aaattggcga 900
cgacctcagt gtcagcacct ggctcagtga tggagcggtg gctggctgcc gtgtggccgc 960
ggtgttcatg caatatggca tcgtggccaa ctactgctgg ctgctggtgg agggcctgta 1020
cctgcacaac ctgctgggcc tggccaccct ccccgagagg agcttcttca gcctctacct 1080
gggcatcggc tggggtgccc ccatgctgtt cgtcgtcccc tgggcagtgg tcaagtgtct 1140
gttcgagaac gtccagtgct ggaccagcaa tgacaacatg ggcttctggt ggatcctgcg 1200
gttccccgtc ttcctggcca tcctgatcaa cttcttcatc ttcgtccgca tcgttcagct 1260
gctcgtggcc aagctgcggg cacggcagat gcaccacaca gactacaagt tccggctggc 1320
caagtccacg ctgaccctca tccctctgct gggcgtccac gaagtggtct ttgccttcgt 1380
gacggacgag cacgcccagg gcaccctgcg ctccgccaag ctcttcttcg acctcttcct 1440
cagctccttc cagggcctgc tggtggctgt cctctactgc ttcctcaaca aggaggtgca 1500
gtcggagctg cggcggcgtt ggcaccgctg gcgcctgggc aaagtgctat gggaggagcg 1560
gaacaccagc aaccacaggg cctcatcttc gcccggccac ggccctccca gcaaggagct 1620
gcagtttggg aggggtggtg gcagccagga ttcatctgcg gagaccccct tggctggtgg 1680
cctccctaga ttggctgaga gccccttctg aaccctgctg ggaccccagc tagggctgga 1740
ctctggcacc cagaggcgtc gctggacaac ccagaactgg acgcccagct gaggctgggg 1800
gcgggggagc caacagcagc ccccacctac ccccacccc cagtgtggct gtctgcgaga 1860
ttgggcctcc tctccctgca cctgccttgt ccctggtgca gaggtgagca gaggagtcca 1920
gggcgggagt gggggctgtg ccgtgaactg cgtgccagtg tccccacgta tgtcggcacg 1980
tcccatgtgc atggaaatgt cctccaacaa taaagagctc aagtggtcac cgtg
<210> 6
<211> 477
<212> PRT
<213> Homo sapiens
<400> 6
Met Pro Pro Cys Gln Pro Gln Arg Pro Leu Leu Leu Leu Leu Leu
                                    10
 1
Leu Ala Cys Gln Pro Gln Val Pro Ser Ala Gln Val Met Asp Phe Leu
                                25
            20
Phe Glu Lys Trp Lys Leu Tyr Gly Asp Gln Cys His His Asn Leu Ser
        35
                            40
Leu Leu Pro Pro Pro Thr Glu Leu Val Cys Asn Arg Thr Phe Asp Lys
                                             60
                        55
    50
Tyr Ser Cys Trp Pro Asp Thr Pro Ala Asn Thr Thr Ala Asn Ile Ser
                    70
                                         75
Cys Pro Trp Tyr Leu Pro Trp His His Lys Val Gln His Arg Phe Val
                                    90
                85
Phe Lys Arg Cys Gly Pro Asp Gly Gln Trp Val Arg Gly Pro Arg Gly
                                105
            100
Gln Pro Trp Arg Asp Ala Ser Gln Cys Gln Met Asp Gly Glu Glu Ile
                            120
        115
Glu Val Gln Lys Glu Val Ala Lys Met Tyr Ser Ser Phe Gln Val Met
                                             140
                        135
Tyr Thr Val Gly Tyr Ser Leu Ser Leu Gly Ala Leu Leu Leu Ala Leu
                                         155
                    150
Ala Ile Leu Gly Gly Leu Ser Lys Leu His Cys Thr Arg Asn Ala Ile
                                     170
                165
His Ala Asn Leu Phe Ala Ser Phe Val Leu Lys Ala Ser Ser Val Leu
                                 185
Val Ile Asp Gly Leu Leu Arg Thr Arg Tyr Ser Gln Lys Ile Gly Asp
                             200
        195
Asp Leu Ser Val Ser Thr Trp Leu Ser Asp Gly Ala Val Ala Gly Cys
                                             220
                         215
Arg Val Ala Ala Val Phe Met Gln Tyr Gly Ile Val Ala Asn Tyr Cys
                                         235
225
                     230
Trp Leu Leu Val Glu Gly Leu Tyr Leu His Asn Leu Leu Gly Leu Ala
                                     250
                245
Thr Leu Pro Glu Arg Ser Phe Phe Ser Leu Tyr Leu Gly Ile Gly Trp
```

270 260 265 Gly Ala Pro Met Leu Phe Val Val Pro Trp Ala Val Val Lys Cys Leu 275 280 285 Phe Glu Asn Val Gln Cys Trp Thr Ser Asn Asp Asn Met Gly Phe Trp 300 290 295 Trp Ile Leu Arg Phe Pro Val Phe Leu Ala Ile Leu Ile Asn Phe Phe 315 320 305 310 Ile Phe Val Arg Ile Val Gln Leu Leu Val Ala Lys Leu Arg Ala Arg 325 330 335 Gln Met His His Thr Asp Tyr Lys Phe Arg Leu Ala Lys Ser Thr Leu 340 345 350 Thr Leu Ile Pro Leu Leu Gly Val His Glu Val Val Phe Ala Phe Val 355 360 Thr Asp Glu His Ala Gln Gly Thr Leu Arg Ser Ala Lys Leu Phe Phe 370 375 380 Asp Leu Phe Leu Ser Ser Phe Gln Gly Leu Leu Val Ala Val Leu Tyr 385 390 395 Cys Phe Leu Asn Lys Glu Val Gln Ser Glu Leu Arg Arg Arg Trp His 405 410 415 Arg Trp Arg Leu Gly Lys Val Leu Trp Glu Glu Arg Asn Thr Ser Asn 420 425 430 His Arg Ala Ser Ser Ser Pro Gly His Gly Pro Pro Ser Lys Glu Leu 435 445 440 Gln Phe Gly Arg Gly Gly Ser Gln Asp Ser Ser Ala Glu Thr Pro 455 460 Leu Ala Gly Gly Leu Pro Arg Leu Ala Glu Ser Pro Phe 470